

## **REMARKS**

### **Pending Claims**

Claims 1-11, 13-33, 35-46, and 48-62 are pending. Claims 21 and 54 are currently amended. Claims 45, 48-53, and 60-62 are withdrawn. Applicant respectfully requests the Examiner rejoin method claims 45, 48-53, and 60-62 upon allowance of product claims 1-11, 13-33, 35-44, and 54-59.

### **Claim rejections - 35 U.S.C. § 103**

Claims 1-11, 13-33, 35-44, and 54-59 are rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Zegler (U.S. Patent No. 6,228,479) as evidenced by *Kotlair et al.* (U.S. Patent No. 5,626,939), *Boedeker* website: [www.bodecker.com/polyp\\_p.htm](http://www.bodecker.com/polyp_p.htm), *Goodfellow* website: [www.goodfellow.com/csp/active/STATIC/E/Polyamide\\_-\\_Nylon\\_6.html](http://www.goodfellow.com/csp/active/STATIC/E/Polyamide_-_Nylon_6.html), and *Corneliussen* website: [www.maropolymeronline.com](http://www.maropolymeronline.com). Applicant respectfully traverses this rejection.

Independent claims 1, 21, and 54 are directed to a structural composite material including non-aromatic nylon fiber **having a length of about 0.9 cm to about 8 cm**, dispersed in a fused matrix containing polyolefin and non-aromatic nylon. The composite comprises non-aromatic nylon fibers that are partially melted and others that remain unmelted fibers in the resulting composite. The partially melted and unmelted fibers are dispersed within the fused matrix. The fibers dispersed in the matrix provide a composite having unique physical, chemical, and mechanical properties. In particular, the claimed composite has a flexural elastic modulus of at **least about  $2 \cdot 10^5$  psi**.

### **Zegler does not teach all claim limitations:**

None of the cited references, including newly cited Zegler, alone or in combination with the cited secondary references teach or suggest all the limitations of the instant claims. In particular, Zegler fails to teach a structural material **having fibers** of about 0.9 cm to about 8 cm in length, dispersed within the fused matrix. Zegler also fails to teach a composite having the

required flexural elastic modulus. Applicant notes the claimed fiber length in a fused matrix produces a composite material having unique strength and flex properties.

Zegler fails to teach or suggest a composite material as claimed. In contrast to the claimed fibers of specific length and diameter (0.9 cm to 8 cm in length and about 0.2 mm to 7 cm diameter) Zegler describes processing a carpet feed stock by first chopping carpet into 3/4-1" lengths, that are then "finely granulated" to fragments about "3/8" or smaller" (see, column 3). Thus, the granulation step takes the coarsely chopped portions (1 inch or less) and finely granulates them to smaller sized pellets. While no fiber size is reported in the reference, the granulation of one inch carpet fragments is noted to reduce the size "by an order of magnitude."

In the sole example provided at column 5, the process for producing the Zegler material is described. Waste carpet is chopped into fragments of about 3/4 to 1 inch. The fragments are then granulated into a granulated mixture having fragments of **less than 3/8 inch**. The granulated mixture is extruded at a temperature of about 215 °C, at a pressure of about 120-200 psi, and flow rate of about 7-15,000 lb/hr.

For the process and product described in the present application, the presence of fibers having a particular length (about 0.9 to about 8 cm) is important to the structural characteristics of the final product. The act of **finely granulating** the chopped polymer waste material would reduce the size of the fibers and thereby remove this important feature of the final product. Accordingly, the claimed product and process of the instant application differs structurally and functionally from the cited Zegler product and process.

For at least the reason that Zegler teaches a process that includes a **granulation step**, a step that significantly reduces fiber size, this reference fails to teach or suggest the invention as claimed.

The secondary evidence cited for the mechanical properties of carpet and carpet fibers do nothing to cure the deficiencies of the primary reference.

In summary, Zegler, alone or in combination with the cited secondary evidence, fails to teach or suggest the claimed invention. Withdrawal of this rejection is respectfully requested.

**Rejoinder**

Applicant respectfully requests the Examiner rejoin method claims 45, 48-53, and 60-62 upon allowance of product claims 1-11, 13-33, 35-44, and 54-59. Claims 1-11, 13-33, 35-46, and 48-62 are pending.

**Conclusion**

In summary, Applicant submits that each of claims 1-11, 13-33, 35-46, 48-62 is in condition for allowance, and notification to that effect is earnestly solicited. The Examiner is invited to contact Applicants' representative at the telephone number listed below, to clarify any of the above Amendments or Remarks, or to otherwise expedite prosecution of this application.

Respectfully submitted,

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